PATENT ABSTRACTS OF JAPAN

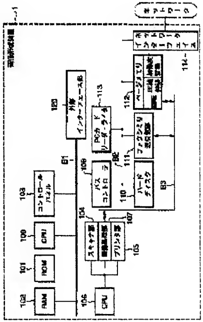
(11)Publication number : 2000-185440
(43)Date of publication of application : 04.07.2000

(51)Int.Cl.
B41J 5/30
B41J 3/44
G03G 21/00
G06F 9/445

(21)Application number : 10-365579
(22)Date of filing : 22.12.1998
(71)Applicant : TOSHIBA CORP
(72)Inventor : TANIGUCHI MASAHIKO

(54) IMAGING APPARATUS AND CONTROL METHOD BY PROGRAM OF DIFFERENT MEMORY ADDRESS

(57)Abstract:
PROBLEM TO BE SOLVED: To provide an imaging apparatus in which replacement of a ROM accompanied by change and addition of various functions is not necessary.
SOLUTION: An imaging apparatus comprises means 105, 107 for forming an image based on an image data read out by an image reading means 104, a first memory means 101 for storing an invariant basic program, a second rewritable memory means 102 for storing an image data read out by the image reading means and a program other than the basic program, and means 100 for controlling the image reading means and the image forming means based on the program stored in the first and second memory means.



LEGAL STATUS

[Date of request for examination] 22.09.2004
[Date of sending the examiner's decision of rejection]
[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]
[Date of final disposal for application]
[Patent number]
[Date of registration]
[Number of appeal against examiner's decision of rejection]
[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office

* NOTICES *

JPO and NCIPI are not responsible for any
damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] An image reading means to read an image, and an image formation means to form an image based on the image data read by said image reading means, While memorizing the image data read by the 1st read-only storage means and said read-only image reading means when an eternal basic program is memorized 2nd rewritable storage means to memorize programs other than said basic program, A receipt means to receive the rewriting program for rewriting the additional program newly memorized by said 2nd storage means or the memorized program memorized by said 2nd storage means, Image formation equipment characterized by having the control means which controls said image reading means and said image formation means based on the program memorized by said 1st and 2nd storage means.

[Claim 2] An image reading means to read an image, and an image formation means to form an image based on the image data read by said image reading means, While memorizing the image data read by the 1st read-only storage means and said read-only image reading means when an eternal basic program is memorized Programs other than said basic program, and 2nd rewritable storage means to memorize the text corresponding to two or more language, A receipt means to receive the rewriting program for rewriting the additional program newly memorized by said 2nd storage means or the memorized program memorized by said 2nd storage means, While controlling said image reading means and said image formation means based on the program memorized by said 1st and 2nd storage means Image formation equipment characterized by having the control means which chooses and outputs the text of predetermined language among the text corresponding to two or more language memorized by said 2nd storage means.

[Claim 3] While memorizing the image data read by image reading means to read an image, and said image reading means 1st rewritable storage means to memorize the application program with which modification is expected, An image formation means to form an image based on the image data memorized by said 1st storage means, 2nd read-only storage means to memorize the eternal basic program containing the loader program which reads only a required part among the application programs memorized by said 1st storage means, The additional application program newly memorized by said 1st storage means, Or a receipt means to receive the rewriting application program for rewriting the memorized application program memorized by said 1st storage means, Image formation equipment characterized by having the control means which controls said image reading means and said image formation means based on the program memorized by said 1st and 2nd storage means.

[Claim 4] While memorizing the image data read by image reading means to read an image, and said image reading means The application program with which modification is expected, and 1st rewritable storage means to memorize the read-out list which specified read-out of this application program, An image formation means to form an image based on the image data memorized by said 1st storage means, 2nd read-only storage means to memorize the eternal basic program containing the loader program which reads only a required part among the application programs memorized by said 1st storage means based on said read-out list, The additional application program newly memorized by said 1st storage means and the read-out list for these additional application programs, Or a receipt means to receive the rewriting application program for rewriting the memorized application program memorized by said 1st storage means, and the read-out list for these rewriting application programs, Image formation equipment characterized by having the control means which controls said image reading means and said image formation means based on the program memorized by said 1st and 2nd storage means.

[Claim 5] The control approach by the program from which the storage place characterized by to have the

2nd step which controls image reading by said image read station and the image formation by said image-formation section based on the basic program memorized by the read-only storage section based on the 1st step which sets up the hardware containing the image-formation section which forms the image read station and the image which read an image, and the application program which were memorized by the rewritable storage section differs.
[Claim 6] The control approach by the program from which the storage place according to claim 5 characterized by having the 3rd step which sets up a new application program in the storage section in which said rewriting is possible, and the 4th step which controls image reading according to said image read station based on the new application program set up by said 3rd step and the image formation by said image formation section differs.
[Claim 7] The control approach by the program from which the storage place according to claim 5 characterized by having the 3rd step which upgrades said application program memorized by the storage section in which said rewriting is possible, and the 4th step which controls image reading according to said image read station based on the application program upgraded by said 3rd step and the image formation by said image formation section differs.
[Claim 8] Image formation equipment according to claim 4 characterized by what it has for the area which memorizes an application program with the expiration date including the program to which it shows the approach of using it [when said 1st storage means reaches at the expiration date, after reaching at having reached at the expiration date, and the expiration date].

[Translation done.]

* NOTICES *

JPO and NCIPI are not responsible for any
damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the image formation equipment which reads an image, accumulates the read image data and forms the image based on the accumulated image data. Moreover, it is related with the control approach by the program from which the storage place in such image formation equipment differs.
[0002]
[Description of the Prior Art] The digital copier which reads an image to image formation equipment, accumulates the read image data in it, and forms the image based on the accumulated image data is known. Magnetic storage was applied to an are recording means to accumulate image data, and this magnetic storage had a main role of substitution of semiconductor memory. That is, this technique was that which makes it possible to reduce the amount of loading of expensive semiconductor memory by carrying magnetic storage with the cheap unit price per bit in image formation equipment, and to accumulate mass image information.
[0003]
[Problem(s) to be Solved by the Invention] However, the storage capacity of magnetic storage becomes large by leaps and bounds, and it is becoming in inefficient to use magnetic storage only for are recording of image information with image formation equipment in recent years.
[0004] Moreover, ROM (read-only memory) and RAM (R/W free memory) were carried in image formation equipment also from the former. The control software which controls image formation equipment was written in ROM, and when the control software on this ROM was performed by RAM by CPU of image formation equipment, it was used for it as fields, such as a variable.
[0005] The control software of the image formation equipment currently written in this ROM may change the contents after factory shipments. If it says in what kind of case modification of the contents of ROM occurs, after selling image formation equipment, a user newly purchases hardware as an option function of image formation equipment, and modification accompanying version up of the case where modification arises in the hardware configuration of image formation equipment, or the control software exists.
[0006] With conventional image formation equipment, the means of exchange of ROM had attained modification of this control software. This is because all the control software of image formation equipment is written in ROM.
[0007] In order to exchange ROMs, I hear that becoming a big problem here needs to prepare ROM for exchange, and there is. It leads to a price hike of preparing this ROM for exchange, i.e., image formation equipment.
[0008] Moreover, it was a very complicated activity from the former for ROM from which dozens of kinds of contents differ from some kinds by the difference in a hardware configuration or shipment ****** to exist at the time of the factory shipments of image formation equipment, and to manage them.
[0009] The purpose of this invention is to accomplish in view of a situation which was described above, and offer the control approach by the program from which following image formation equipment and a storage place differ.
(1) Image formation equipment which does not need ROM exchange with modification and an addition of various functions.
(2) The control approach by the program from which the storage place for not needing ROM exchange with

modification and an addition of various functions differs.

[0010]

[Means for Solving the Problem] In order to solve the above-mentioned technical problem and to attain the purpose, the control approach by the program from which the image formation equipment of this invention and a storage place differ is constituted as follows.

[0011] An image reading means by which the image formation equipment of this invention reads an image, and an image formation means to form an image based on the image data in which it was read by said image reading means, While memorizing the image data read by the 1st read-only storage means and said read-only image reading means when an eternal basic program is memorized 2nd rewritable storage means to memorize programs other than said basic program, A receipt means to receive the rewriting program for rewriting the additional program newly memorized by said 2nd storage means or the memorized program memorized by said 2nd storage means, Based on the program memorized by an account 1st and the 2nd storage means, it has the control means which controls said image reading means and said image formation means.

[0012] The control approach by the program from which the storage place of this invention differs is equipped with the 2nd step which controls image reading by said image read station, and the image formation by said image-formation section based on the basic program memorized by the read-only storage section based on the 1st step which sets up the hardware containing the image-formation section which forms the image read station and the image which read an image, and the application program which were memorized by the rewritable storage section.

[0013]

[Embodiment of the Invention] Hereafter, the gestalt of implementation of this invention is explained with reference to a drawing.

[0014] Drawing 1 and drawing 2 are drawings showing the outline configuration of the image formation equipment (digital copier) 1 concerning this invention. Maine CPU100, ROM101, and RAM102, a control panel 103, the scanner section 104, the printer section 105, a mechanical CPU 106, the image-processing section 107, a bus controller 108, magnetic storage (for example, about 5GB of hard disk) 110, the facsimile transceiver section 111, the page memory 112, PC card reader writer 113, the network interface 114, and the external interface 120 are formed in the image formation equipment 1 shown in drawing 1 and drawing 2 .

[0015] Furthermore, if it says in detail, Maine CPU100, ROM101, and RAM102, a control panel 103, a mechanical CPU 106, the image-processing section 107, the bus controller 108, and the external interface 120 are connected through the control bus B1. Moreover, a bus controller 108, magnetic storage 110, the facsimile transceiver section 111, the page memory 112, PC card reader writer 113, and the network interface 114 are connected through control bus B-2. The image-processing section 107, magnetic storage 110, the facsimile transceiver section 111, and the page memory 112 are connected through the control bus B3.

[0016] Although CPU100 controls the whole image formation equipment 1, directly, it controls each part connected to the bus B1. Moreover, this CPU100 controls magnetic storage 110, the facsimile transceiver section 111, the page memory 112, PC card reader writer 113, and a network interface 114 through a bus controller 108 and control bus B-2. Each part connected through control bus B-2 delivers image data through this control bus B-2. Similarly, each part connected through the control bus B3 delivers image data through this control bus B3.

[0017] The scanner section 104 as an image reading means outputs the image data corresponding to the image of read and this manuscript for the manuscript set to the manuscript base. The image data outputted from the scanner section 104 is compressed in the image-processing section 107, and is accumulated in magnetic storage 110. It is elongated in the image-processing section 107, and the image data accumulated in the hard disk is supplied to the printer section 105 as an image formation means. The printer section 105 forms in a form the image based on the image data supplied from magnetic storage 110.

[0018] Incidentally, the scanner section 104, the printer section 105, and the facsimile transceiver section 111 can be separately independent, and can operate now.

[0019] Then, with reference to drawing 3 , the outline configuration of the external terminal 2 connected to the external-interface section 120 of the image formation equipment 1 shown in drawing 1 and drawing 2 is explained.

[0020] The input devices 205, such as the indicating equipments 204, such as CPU200, RAM201 and ROM202 which control the external terminal 2 whole, an external interface 203, and a display, a keyboard, and a mouse, magnetic storage (hard disk drive) 206, CD-ROM drive equipment 207, and the PC card interface 208 are formed in the external terminal 2.

[0021] It connects with the external-interface section 120 of image formation equipment 1 with standard interfaces [external interface / 203 / of the external terminal 2], such as RS-232C, SENTORO, and SCSI and GPIB. Moreover, the device driver which performs communications control under these interfaces, and the application which a serviceman uses for the setup of image formation equipment shall already be installed in the external terminal 2. And the external terminal 2 and image formation equipment 1 communicate with a predetermined protocol.

[0022] The control software in conventional image formation equipment existed in the form depending on the difference in the hardware configuration of the image formation equipment at the time of factory shipments, and the difference in the shipment destination, and was written in ROM. This means that only the part to which ROM which wrote in control software applied the combination of the hardware configuration of image formation equipment and the combination of shipment ****** to each country exists. To the top where ROM management of the control software is complicated, at least this also had to manage the version of the control software further at coincidence.

[0023] It is the big description that all the control software that controls by this invention this image formation equipment 1 that contains a part for shipment ****** in the magnetic storage 110 of the image formation equipment 1 shown in drawing 1 and drawing 2 at the time of factory shipments is carried.

[0024] Moreover, by combining the management method in the magnetic storage 110 of this control software with the activation gestalt of the control software of the image formation equipment 1 shown below, all are opened wide and it becomes possible from a management activity with complicated ROM of the above control software to abolish the ROM exchange activity at the time of Make Changes of the control software which is the conventional technique. Moreover, version up of the control software will also become very easy

[0025] First, five programs are greatly written in ROM101 of target image formation equipment 1 by this invention. This is used for malfunction detection, such as hardware, for the 1st by the self diagnostic program at the time of starting of image formation equipment 1. The 2nd initializes the hardware of image formation equipment 1 by the initializer, and they change it into an usable condition. By the loader program, the 3rd loads the control software on magnetic storage 110 to RAM102, and they perform it. The 4th is used in serviceman mode by the serviceman program, and they perform modification of communications control with the external terminal 2, or the control software on magnetic storage 110. And it is a bootstrap for finally starting each program. Since only these control software exists on ROM101, this invention is sufficient for ROM with a far small capacity compared with ROM in which all control software was written with conventional image formation equipment.

[0026] Actuation of the control software (basic program) enclosed with ROM101 of image formation equipment 1 is explained using drawing 4 .

[0027] If the power source of image formation equipment 1 is switched on, CPU100 will start activation of the control program on ROM101. First, the program first performed by CPU100 is a bootstrap. If a power source is switched on pressing the specific key which has the control panel 103 of image formation equipment 1 at this time, a bootstrap will start a serviceman program and image formation equipment 1 will be started in serviceman mode (ST2, NO).

[0028] Usually, image formation equipment is started by normal mode (ST2, YES). If the judgment of serviceman mode or normal mode is completed and image formation equipment starts by normal mode, a bootstrap will start a self diagnostic program. The capacity of the capacity of RAM102 carried in image formation equipment 1 and a check (ST4) of operation, and the page memory 112 and a check (ST6) of operation, the check (ST8) of the hardware which constitutes image formation equipment 1, and the check (ST10) of magnetic storage 110 are performed to this self diagnostic program, and it checks whether all the control software stored in magnetic storage 110 is normal (ST12). Moreover, the check of the file of the module list table mentioned later is also performed here (ST14).

[0029] If a certain abnormalities are detected by the activation midst of this self diagnostic program (ST16, YES), image formation equipment 1 will output the message of a serviceman call on a control panel 103, and a self diagnostic program (ST18) will go into an endless loop.

[0030] When no error is able to be detected by activation of a self diagnostic program, it considers that the hardware and control software which constitute (ST16, NO), and image formation equipment 1 are normal, and they move to the next actuation.
[0031] Next, a bootstrap starts an initializer. An initializer initializes the hardware of ********** equipment 1 (ST20), and starts warming up by setting a heater to ON (ST22). Image formation equipment 1 will be in ready state in the place which warming up ended, and control is returned to a bootstrap and becomes usable [image formation equipment 1].
[0032] When performing the function of image formation equipment, since those control programs existed on ROM, by the former, the control program on ROM according to the function which image formation equipment uses was performed.
[0033] However, in this invention, since a control program (application program) exists in the magnetic storage 110 of image formation equipment 1, the activation approach differs from the former. The situation of the control is explained with reference to drawing 5 and drawing 6 .
[0034] First, it explains with reference to drawing 5 . If the key of a control panel 103 is pressed, or the command of functional activation to image formation equipment 1 etc. is published from LAN and an event occurs in the image formation equipment 1 interior, control will shift to a loader program from a bootstrap (ST32). A loader program analyzes the event detected first (ST34). And it determines whether to perform the function of image formation equipment 1 throat. Of course, a priority judging when performing the function of image formation equipment 1 is also included in this decision. Next, a loader program grasps the module of the control software which is needed by the function of the image formation equipment 1 to perform with reference to the module list table which exists on magnetic storage 110 (ST36). And the required control software is loaded to RAM102 from magnetic storage 110 (ST40), and activation and control are made to shift to the control software on RAM102 according to the contents of this module list table (ST42). And control returns from the control program on RAM102 to the bootstrap on the above ROM 101 after functional activation of a copy, a printer, a scanner, and image formation equipment called facsimile. The control program on RAM101 which ended control at this time serves as a cache object.
[0035] Moreover, when the same event which performs the same function as last time occurs, (ST38, YES), and a loader program only refer to a module list table, and can shift control to the control software on RAM102 immediately. For this reason, if the event which uses the same function occurs in succession twice or more, a loader program can pass control to a high speed at the control software on RAM102 without carrying out loading the control software to RAM102 from magnetic storage 110.
[0036] Then, a module list table is explained with reference to drawing 6 . A module list table exists as a file on the magnetic storage 110 of image formation equipment 1, and the DS of the file is two-dimensional array, as shown in drawing 7 . A loader program recognizes the function to analyze and perform the event generated in the image formation equipment 1 interior. And a loader program recognizes a control software module required as an index for the functional number corresponding to the execution function of a module list table by the module name, and loads the control software module concerned to carry out to RAM102 from magnetic storage 110 using the module name.
[0037] Then, the case where serviceman mode is chosen at the time of starting of image formation equipment 1 is explained using drawing 8 .
[0038] Usually, a user does not use this mode. A serviceman uses this mode, and when setting up image formation equipment 1 only after newly purchasing image formation equipment 1, the case where it is used changes the hardware configuration of image formation equipment 1 after a setup, and when image formation equipment 1 needs to be re-set up, it is the case of version up of the control software on the magnetic storage 110 of image formation equipment 1.
[0039] When using it in serviceman mode, it is used connecting the external terminal 2. When it goes into serviceman mode in the condition that the external terminal 2 is not connected (ST52, NO), the message which stimulates connection of an external terminal on the control panel 103 of image formation equipment 1 is displayed, and a serviceman program goes into an endless loop.
[0040] When the external terminal 2 is connected (ST52, YES), image formation equipment 1 and the external terminal 2 communicate according to a predetermined communications protocol, and secure connection (ST56). If connection is secured, the setup program on the external terminal 2 will display the purport of circuit assurance on the external terminal 2 (ST58). A serviceman controls image formation equipment by operating the external terminal 2 after this.

[0041] Next, the setup program of the external terminal 2 demands selection of whether image formation equipment 1 is set up or to upgrade control software in the magnetic storage 110 of image formation equipment 1 from a serviceman using the display 204 of the external terminal 2.
[0042] When the setup of image formation equipment 1 is chosen (ST60, setup), it checks whether a setup program communicates with image formation equipment 1 according to a predetermined protocol, and a module list table exists on the magnetic storage 110 of image formation equipment 1 (ST62). When a module list table exists, (ST62, YES), and a setup program ask a serviceman for authorization of elimination of this file as well as the above-mentioned means using the display 204 of the external terminal 2 (ST64).
[0043] Next, it urges that setup software inputs Hardware Configuration Information of image formation equipment 1 (ST66). This makes a serviceman input the hardware information on image formation equipments, such as page memory space, RAM capacity, FAX existence, printer existence, and LAN existence, through the check box of a screen like the example of a screen shown in drawing 9 .
[0044] After an input is completed, there is a check of the contents of the hardware configuration, and if the contents are good, O.K. will be directed with a setup program. At this time, the external terminal 2 transmits the module list table which generated the module list table on RAM201 of a terminal, and was communicated and generated with the external-interface section 120 of image formation equipment 1, and a predetermined protocol to image formation equipment 1 (ST68). Image formation equipment 1 saves this transmitted module list table to magnetic storage 110. Thus, renewal of a module list table is completed.
[0045] When version up of the control software is chosen, as it is in the example of a screen which shows the new control software which exists in (ST60, version up), and the external terminal 2 to drawing 10 , it chooses (ST70). And a setup program transmits and overwrites the new control software chosen with the predetermined protocol through the external-interface section 120 of image formation equipment 1 to magnetic storage 110 (ST72). Thus, version up of the control software is completed.
[0046] By this invention, version up of the control software can be attained by overwrite of the module of the control software, and modification of the control software accompanying modification of the hardware configuration of image formation equipment 1 can be attained by updating the module list table on magnetic storage 110. Anyway, exchange of ROM is not generated with the image formation equipment 1 of this invention.
[0047] Furthermore, in the image formation equipment 1 of this invention, since all control software is contained in magnetic storage 110 from the time of factory shipments, the expansion of the image formation equipment 1 by software is easy. For example, it can also make it easy to enable rendering processing with the control software and to perform expansion of image formation equipment 1 to image formation equipment 1 without a printer controller as a printer.
[0048] In fact, this will be realized if the above-mentioned loader program loads the module which performs a software rendering with a control program to up to RAM102. This is used and it is made to make the control software which performs a hardware emulation choose from a control panel 103 in a menu format. A user chooses a software emulation function according to a menu, and extends the function of image formation equipment 1. However, this expansion will serve as an invalid, if there is a limit and predetermined days pass from the day which carried out expansion. And the expansion by software having reached the days limit, when this extended function was chosen after predetermined days progress, and a true expansion **** case display the message of whether predetermined hardware is added to image formation equipment 1, or to request period extension of a software emulation function from a serviceman on a control panel 103.

[0049] Thus, emulation ** and a provisional target can be made to be able to use a specific function with image formation equipment for a user by software, and a function can be made to experience.
[0050] Furthermore, two or more language can be made to correspond easily with the image formation equipment of this invention. ROM by which text required for a Japanese display was conventionally recorded on Japanese-capable image formation equipment was carried, and ROM text required for an English display was remembered to be was carried in the image formation equipment corresponding to English. Thus, ROM carried for every language needed to be distinguished. On the other hand, in the case of the image formation equipment of this invention, text required for a Japanese display and text required for an English display, and two or more text still more nearly required for the display of other language are memorized to magnetic storage, and the language of the purpose can be displayed only by choosing predetermined language in maintenance mode.

[0051] An operation and effectiveness of the image formation equipment of this invention that gave [above-mentioned] explanation are summarized to below.
- The large capacity can be effectively used for the magnetic storage carried in image formation equipment in addition to the are recording means of image information.
- The ROM exchange activity accompanying modification of the hardware configuration of image formation equipment or version up of the control software can be abolished, and the price fall of image formation equipment can be aimed at as a result.
- Complicated management of the control software corresponding to the hardware configuration of the image formation equipment at the time of the language correspondence according to shipment ****** at the time of the factory shipments of image formation equipment or shipment is mitigable.
[0052]
[Effect of the Invention] According to this invention, the control approach by the program from which following image formation equipment and a storage place differ can be offered.
(1) Image formation equipment which does not need ROM exchange with modification and an addition of various functions.
(2) The control approach by the program from which the storage place for not needing ROM exchange with modification and an addition of various functions differs.

[Translation done.]

* NOTICES *

JPO and NCIPI are not responsible for any
damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] The sectional view showing the outline configuration of the image formation equipment concerning this invention.
[Drawing 2] The block diagram showing the outline configuration of the image formation equipment concerning this invention.
[Drawing 3] The block diagram showing the outline configuration of the external terminal connected through the external interface of the image formation equipment shown in drawing 2 .
[Drawing 4] The flow chart explaining the various control based on the control software (basic program) memorized by ROM of the image formation equipment shown in drawing 2 .
[Drawing 5] The flow chart explaining control by the loader program.
[Drawing 6] Drawing for explaining use of the module list table by the loader program.
[Drawing 7] Drawing showing the image of the DS of a module list table.
[Drawing 8] The flow chart which explains to a detail the serviceman mode performed in the flow chart shown in drawing 4 .
[Drawing 9] Drawing showing an example of a setup menu screen.
[Drawing 10] Drawing showing an example of a version up menu screen.
[Description of Notations]
1 -- Image formation equipment
2 -- External terminal
100 -- Maine CPU
101 -- ROM
102 -- RAM
103 -- Control panel
104 -- Scanner section
105 -- Printer section
106 -- Mechanical CPU
107 -- Image-processing section
108 -- Bus controller
110 -- Magnetic storage (hard disk)
111 -- Facsimile transceiver section
112 -- Page memory
113PC card reader writer
114 -- Network interface
120 -- External interface

[Translation done.]

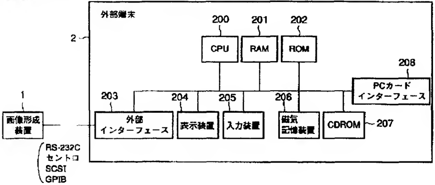
* NOTICES *

JPO and NCIPI are not responsible for any
damages caused by the use of this translation.

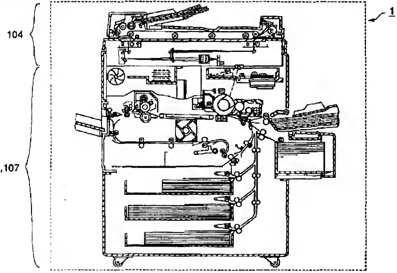
1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DRAWINGS

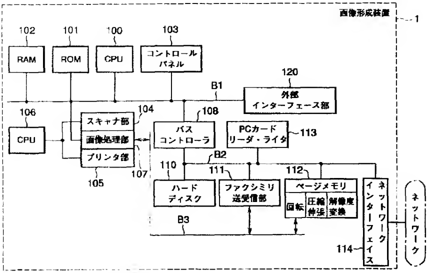
[Drawing 3]


外部端末
2
200
201
202
CPU
RAM
ROM
208
PCカード
インターフェース
1
203
204
205
206
画像形成
装置
外部
インターフェース
表示装置
入力装置
磁気
記憶装置
CDROM
207
RS-232C
セントロ
SCSI
GPIB

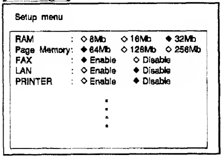
[Drawing 1]


1
104
105,107

[Drawing 2]


画像形成装置
1
102
RAM
101
ROM
100
CPU
103
コントロール
パネル
120
B1
外部
インターフェース部
106
CPU
104
スキャナ部
画像処理部
プリンタ部
105
107
108
バス
コントローラ
PCカード
リーダ・ライタ
113
B2
110
ハード
ディスク
111
ファクシミリ
送受信部
112
ページメモリ
回転
圧縮
伸張
解像度
変換
ネットワーク
インターフェイス
114
B3
ネットワーク

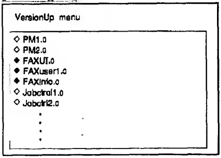
[Drawing 9]



Setup menu

RAM : ◇ 8Mb ◇ 16Mb ◆ 32Mb
Page Memory: ◆ 64Mb ◇ 128Mb ◇ 256Mb
FAX : ◆ Enable ◇ Disable
LAN : ◇ Enable ◆ Disable
PRINTER : ◇ Enable ◆ Disable
⋮

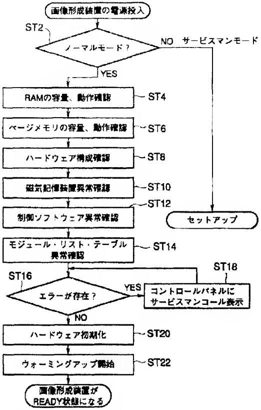
[Drawing 10]



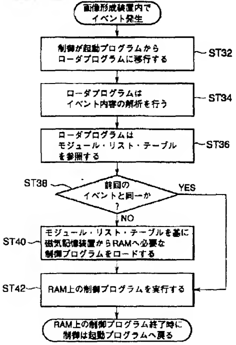
VersionUp menu

◇ PM1.0
◇ PM2.0
◆ FAXUI.0
◆ FAXuser1.0
◆ FAXinfo.0
◇ Jobctrol1.0
◇ Jobctrl2.0
⋮

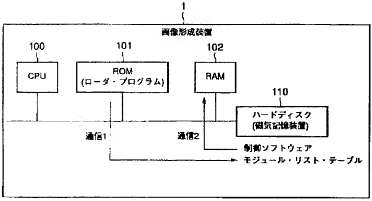
[Drawing 4]


画像形成装置の電源投入
ST2
ノーマルモード？
NO　サービスマンモード
YES
RAMの容量、動作確認
ST4
ページメモリの容量、動作確認
ST6
ハードウェア構成確認
ST8
磁気記憶装置異常確認
ST10
ST12
制御ソフトウェア異常確認
セットアップ
モジュール・リスト・テーブル異常確認
ST14
ST16
ST18
エラーが存在？
YES
コントロールパネルにサービスマンコール表示
NO
ハードウェア初期化
ST20
ウォーミングアップ開始
ST22
画像形成装置がREADY状態になる

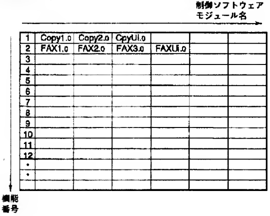
[Drawing 5]


画像形成装置内でイベント発生
制御が起動プログラムからローダプログラムに移行する
ST32
ローダプログラムはイベント内容の解析を行う
ST34
ローダプログラムはモジュール・リスト・テーブルを参照する
ST36
ST38
前回のイベントと同一か？
YES
NO
ST40
モジュール・リスト・テーブルを基に磁気記憶装置からRAMへ必要な制御プログラムをロードする
ST42
RAM上の制御プログラムを実行する
RAM上の制御プログラム終了時に制御は起動プログラムへ戻る

[Drawing 6]

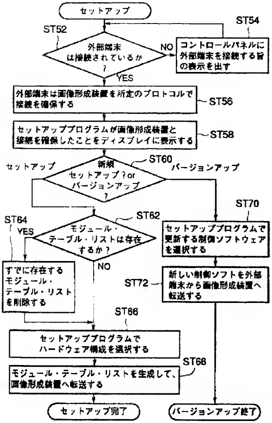

1
画像形成装置
100
CPU
101
ROM
(ローダ・プログラム)
102
RAM
110
ハードディスク
(磁気記憶装置)
通信1
通信2
制御ソフトウェア
モジュール・リスト・テーブル

[Drawing 7]


制御ソフトウェア
モジュール名
機能
番号

1	Copy1.o	Copy2.o	CpyUI.o			
2	FAX1.o	FAX2.o	FAX3.o	FAXUI.o		
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
•						
•						

[Drawing 8]


セットアップ
ST52
外部端末は接続されているか？
NO
ST54
コントロールパネルに外部端末を接続する旨の表示を出す
YES
外部端末は画像形成装置を所定のプロトコルで接続を確保する
ST56
セットアッププログラムが画像形成装置と接続を確保したことをディスプレイに表示する
ST58
セットアップ
新規セットアップ？or バージョンアップ？
ST60
バージョンアップ
ST70
セットアッププログラムで更新する制御ソフトウェアを選択する
ST62
ST64
YES
モジュール・テーブル・リストは存在するか？
NO
すでに存在するモジュール・テーブル・リストを削除する
ST72
新しい制御ソフトを外部端末から画像形成装置へ転送する
ST66
セットアッププログラムでハードウェア構成を選択する
ST68
モジュール・テーブル・リストを生成して、画像形成装置へ転送する
セットアップ完了
バージョンアップ終了

[Translation done.]